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February 22, 2017

Darcy O'Connor  
Assistant Regional Administrator  
Office of Water Protection  
EPA – Region 8  
1595 Wynkoop Street  
Denver, CO 80202-1129

RE: Petroglyph Permit UT20736-00000 Are Permit Expansion, Uintah and Ouray Reservation,  
Duchesne County, Utah

For future correspondence, please reference Case No. 14-1469

Dear M. O'Connor:

The Utah State Historic Preservation Office received your request for our comment on the above-referenced undertaking on February 14, 2017.

We concur with your determinations of eligibility and effect for this undertaking.

This letter serves as our comment on the determinations you have made, within the consultation process specified in §36CFR800.4. If you have questions, please contact me at 801-245-7263 or by email at [cmerritt@utah.gov](mailto:cmerritt@utah.gov).

Sincerely,

Chris Merritt, Ph.D.  
Deputy State Historic Preservation Officer  
Archaeology



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 8

1595 Wynkoop Street  
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Ref: 8WP-SUI

FEB 09 2017

Christopher Merritt, Deputy SHPO  
Utah State History  
300 South Rio Grande Street  
Salt Lake City, Utah 84101

Re: NHPA Section 106 Consultation  
Petroglyph Permit UT20736-00000 Area Permit Expansion, Uintah and Ouray Reservation,  
E¼ Section 36, T5S-R4W, USM, Duchesne County, Utah

Dear Mr. Merritt:

The U.S. Environmental Protection Agency Region 8 Underground Injection Control Program would like to inform you of, and request your recommendations and concurrence regarding, our proposed approach for ensuring compliance with Section 106 of the National Historic Preservation Act (NHPA) as it relates to a pending UIC permit decision. The proposed UIC area Permit expansion would authorize the conversion of production wells to enhanced oil recovery wells within the area referenced above.

In accordance with 36 C.F.R. § 800.3(a), the EPA has made an initial determination that no historic properties will be affected by its planned UIC permit decision regarding the proposed injection wells.

**Background**

The proposed project involves a ¼-square-mile addition to the area covered by an existing UIC area Permit known as Antelope Creek, UIC permit UT20736-00000. (See enclosed maps.) The additional land area, shown in orange on Map 1, is also the area of potential effect. Map 2 shows the proposed additional area next to the existing area Permit, and Map 3 shows the existing area permit boundaries within the Uintah and Ouray Indian Reservation. The project would require some new land disturbances related to the construction of well infrastructure that may accompany the conversion of up to seven production wells to injection wells. (Only one production well currently exists — six others are planned by Petroglyph with their approximate locations shown on Map 1.) These potential injection wells would be used to inject produced water from nearby oil and gas production wells to enhance the recovery of oil. Associated well infrastructure will include a proposed injectate pipeline and proposed road as shown in Map 1, and a small well house set over the wellhead. The EPA is preparing a UIC area Permit modification for the proposed expansion.

A Cultural Resources Inventory (CRI) Report for the proposed project was prepared by Montgomery Archaeological Consultants, Inc., on September 8, 2014, and is enclosed. The report contains recommendations for a finding of "no historical properties affected." There are, however, seven reported archaeological sites within the boundaries of the proposed area Permit expansion, of which four are identified as eligible for the National Register of Historic Places. Based on information provided by the Tribe, the general locations of these seven sites are described in the CRI.

### **EPA's Initial NHPA Determination**

We conclude that no historic properties will be affected. To discourage looting, the Tribe does not disclose to operators the exact location of cultural resources. They have, however, provided Map 4, which shows the four avoidance areas that contain the seven identified sites with the following Smithsonian designations: 42Dc3686, 42Dc3687, 42Dc3688, 42Dc3689, 42Dc3690, 42Dc3691, and 42Dc3701. These four avoidance areas are excluded from the area Permit expansion. This statement is also included within the UIC Permit modification.

### **Request for Concurrence**

The EPA requests your concurrence regarding its initial determination in this matter. If possible, please send us your response within 30 days of receipt of this letter.

If you have any questions or comments, please contact Bruce Suchomel of my staff at 303-312-6001 or [suchomel.bruce@epa.gov](mailto:suchomel.bruce@epa.gov)

Sincerely,

A handwritten signature in black ink, appearing to read 'Darcy O'Connor', with a long horizontal line extending to the right.

Darcy O'Connor  
Assistant Regional Administrator  
Office of Water Protection

Enclosures: Class I Cultural Resources Inventory Report, September 8, 2014  
Maps 1 - 4

cc:

Betsy Chapoose, Director of Cultural Resources, Ute Indian Tribe  
Esther McCullough, BLM  
Mike Hackney, Petroglyph

CULTURAL RESOURCE INVENTORY OF  
PETROGLYPH OPERATING COMPANY'S  
BLOCK PARCEL IN SECTION 36,  
TOWNSHIP 5 SOUTH, RANGE 4 WEST  
DUCHESNE COUNTY, UTAH

By:

Jacki A. Montgomery  
and  
Hanna Romes

Prepared For:

Ute Indian Tribe  
(Uintah & Ouray Agency)

Prepared Under Contract With:

Petroglyph Operating Company  
4116 West 300 South Ioka Lane  
Roosevelt, Utah 84006

Prepared By:

Montgomery Archaeological Consultants, Inc.  
Moab, Utah 84532

MOAC Report No. 14-137

September 8, 2014

United States Department of Interior (FLPMA)  
Permit No. 14-UT-60122

State of Utah Antiquities Project (Survey)  
Permit No. U-14-MQ-0411i

Ute Tribal Permit No. A014-363



## ABSTRACT

Montgomery Archaeological Consultants, Inc. (MOAC) conducted a cultural resource inventory in 2014 for Petroglyph Operating Company's block parcel in Section 36, Township 5 South, Range 4 West, Duchesne County, Utah. The project area is located southeast of the town of Duchesne between Left Fork and Right Fork Antelope Canyon. The legal description is Township 5 South, Range 4 West, Section 36 (Figure 1). A total of 630 acres was surveyed for cultural resources on Ute Tribal land (Uintah and Ouray Agency). Petroglyph Operating Company proposes to develop a number of well locations with associated access and pipelines in the project area.

The inventory resulted in the documentation of seven archaeological sites (42Dc3686, 42Dc3687, 42Dc3688, 42Dc3689, 42Dc3690, 42Dc3691, and 42Dc3701). Four prehistoric sites are recommended eligible to the NRHP. Site 42Dc3686 is a surface quarry that retains good integrity and spatial patterning. It exhibits several different lithic tool types as well as a high density of debitage. This site is recommended eligible to the NRHP under Criterion D because it is likely to contribute to the understanding of aboriginal lithic production and resource utilization in the context of procurement, lithic technology, and land use patterns. Site 42Dc3687 is a discrete lithic scatter that retains good integrity and spatial patterning. It exhibits a diversity of lithic tools and moderate amount of debitage. The site is recommended eligible to the NRHP under Criterion D because it is likely to address such research domains as site function, lithic technology, and aboriginal lithic production systems. Site 42Dc3689 is a temporary camp that retains good integrity and spatial organization. It contains a moderate amount of artifacts with several tools and lies in loose sediments yielding potential for buried cultural remains. Therefore, this site is recommended eligible under Criterion D since it is likely to address such research domains as site function, lithic technology, cultural affiliation, and land use patterns. Site 42Dc3691 is a rock art panel displaying numerous petroglyph figures. This site is recommended eligible to the NRHP under Criterion C and D. The rock art panel embodies the distinctive characteristics of a type, period, and method of construction and may represent the work of a master, and possesses high artistic values (Criterion C). In addition, this site could be subject to further research including rock art style, thematic interpretations, chronology, and spatial analysis (Criterion D). One small surface quarry (42Dc3701) is recommended ineligible to the NRHP since it contains a minimal quantity and diversity of cultural materials. The site lacks temporal indicators, features, and potential for additional cultural remains, hence, it is unlikely to contribute to the prehistoric research domains of the area. Both of the historic sites consisting of a corral (42Dc3688) and an inscription panel (42Dc3690) are considered not eligible to the NRHP. These sites are not associated with events that have made a significant contribution to the broad patterns of our history or with the lives of persons significant to our past (Criteria A and B). Additionally, the sites do not embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic value, or represent a significant and distinguishable entity whose components may lack individual distinction (Criterion C). Furthermore, the sites are unlikely to contribute additional information important to the history of the area (Criterion D).

In conclusion, the cultural resource inventory of Petroglyph Operating Company's block parcel in Township 5 South, Range 4 West, Section 36 resulted in the documentation of seven archaeological sites (42Dc3686, 42Dc3687, 42Dc3688, 42Dc3689, 42Dc3690, 42Dc3691, and 42Dc3701). Four prehistoric sites (42Dc3686, 42Dc3687, 42Dc3689, and 42Dc3691) are recommended eligible to the NRHP. In accordance with Ute Tribal protocol all these sites including an ineligible surface quarry (42Dc3701) require avoidance from future ground disturbing undertakings. Based on adherence to the avoidance recommendation, a determination of "no historic properties affected" is proposed for the project pursuant to 36 CFR 800.

## INTRODUCTION

Montgomery Archaeological Consultants, Inc. (MOAC) conducted a cultural resource inventory in 2014 for Petroglyph Operating Company's block parcel in Section 36, Township 5 South, Range 4 West, Duchesne County, Utah. The project area is located southeast of the town of Duchesne between Left Fork and Right Fork Antelope Canyon. The survey was implemented at the request of Mr. Ed Trotter, permitting consultant for Petroglyph Operating Company, Vernal, Utah. The project occurs on Ute Tribal land (Uintah and Ouray Agency). Petroglyph Operating Company proposed to develop a number of well locations with associated access and pipelines in the project area.

The objectives of the inventory were to locate, document, and evaluate any cultural resources within the project area in accordance with 36 CFR 800, the National Historic Preservation Act of 1966 (as amended). Also, the inventory was implemented to attain compliance with a number of federal and state mandates, including the National Environmental Policy Act of 1969, the Archaeological and Historic Preservation Act of 1974, the Archaeological Resources Protection Act of 1979, American Indian Religious Freedom Act of 1978, and the Utah State Antiquities Act of 1973 (amended 1990).

Amy Ackman (Field Supervisor) assisted by Hanna Romes, Scott Brannan, Brendan Fitzsimmons, and Jayson Gray conducted the fieldwork between June 23 and July 18, 2014 under the auspices of United States Department of Interior (FLPMA) Permit No. 14-UT-60122, State of Utah Antiquities Permit (Survey) No. U-14-MQ-0411i, and Ute Tribal Permit No. A014-363 issued to MOAC, Moab, Utah.

A file search for previous inventories and recorded archaeological sites was performed by Marty Thomas at the State Historic Preservation Office in Salt Lake City on May 1, 2014. This consultation indicated that one cultural resource inventory has been completed in the project area. In 1997, An Independent Archaeologist (AIA) inventoried Petroglyph Operating Company's Ute Tribal 36-8E-4W well location and access road resulting in no cultural resources (Truesdale 1997).

## DESCRIPTION OF THE PROJECT AREA

The project area is situated southeast of the town of Duchesne between Left Fork and Right Fork Antelope Canyon. The legal description is Township 5 South, Range 4 West, Section 36 (Figure 1). A total of 630 acres was surveyed for cultural resources on Ute Tribal land (Uintah and Ouray Agency).

### Environmental Setting

The project area lies within the Uinta Basin physiographic unit, a distinctly bowl shaped geologic structure (Stokes 1986). The Uinta Basin ecosystem is within the Green River drainage; considered the northernmost extension of the Colorado Plateau. The area is characterized by steeply sided, narrow ridges, and benches dissected by intermittent drainages. Outcrops of the Uinta Formation are characterized by a dense, dendritic drainage pattern and topographic relief. This Eocene age formation occurs as fluvially deposited, interbedded sandstone and mudstone and is well known for its fossil vertebrate turtles, crocodilians, fish, and mammals.

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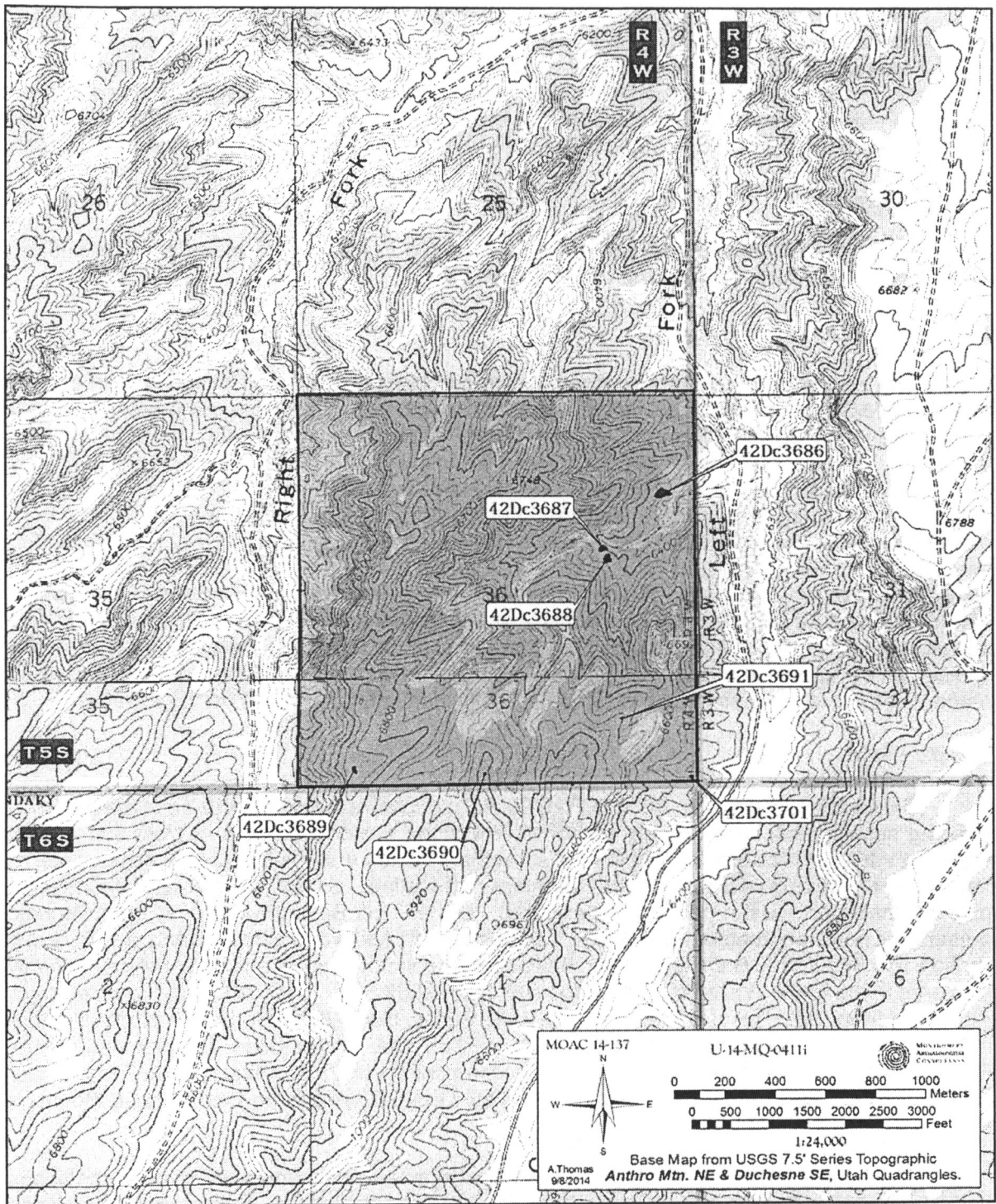


Figure 1. Petroglyph Operating Company's Block Parcel in Township 5S, Range 4W, Section 36 Showing Cultural Resources, Duchesne County, Utah.

The topography consists of high ridges, broken benches and ledges, shallow drainages, and Left Fork Antelope Canyon. The nearest water source is the Antelope Creek situated to the north. Elevation of the project area ranges between 6,280 and 6,880 ft asl. The sediments consist of loose to compacted silty sand overlaid by pebbles, gravel, and cobbles. Vegetation is dominated by a pinyon-juniper woodland with an understory of low sagebrush, Utah serviceberry, Mormon tea, and prickly pear cactus. Modern disturbances are limited to a few roads and oil/gas development.

### Cultural Overview

The cultural-chronological sequence represented in the area includes the Paleoindian, Archaic, Fremont, Protohistoric, and Ute Indian stages.

#### *Paleoindian Stage*

The earliest inhabitants of the region are representative of the Paleoindian stage (ca. 12,000-8000 B.P.), characterized by the adaptation to terminal Pleistocene environments and by the exploitation of big game fauna. The presence of Paleoindian hunters in the Uinta Basin region is implied by the discovery of Clovis and Folsom fluted points (ca. 12,000 B.P. - 10,000 B.P.), as well as the more recent Plano Complex lanceolate points (ca. 10,000 B.P. - 7000 B.P.). Evidence of Paleoindian exploitation of the Uinta Basin consists of isolated projectile points recovered from surface contexts. Documented Folsom points have been found at sites 42Dc221 and 42Dc353 near Roosevelt, Utah (Spangler 2002:218, 219). A variety of Plano Complex Paleoindian projectile points have been documented, including Goshen, Alberta, Hell Gap, and Midland styles (Hauck 1998). Spangler (2002:332) reports that there are no sealed cultural deposits in association with extinct fauna or with chronologically distinct Paleoindian artifacts in Utah. Based on the distribution of diagnostic projectile points, it appears that Paleoindian groups from the northwestern Plains and perhaps the Southwest included the Uinta Basin within their highly mobile hunting strategies.

#### *Archaic Stage*

The Archaic stage (ca. 8000 B.P.-1500 B.P.) is characterized by the dependence on a foraging subsistence, with peoples seasonally exploiting a wide spectrum of plant and animal species in different ecozones. The shift to an Archaic lifeway was marked by the appearance of new projectile point types, and the development of the atlatl, perhaps in response to a need to pursue smaller and faster game (Holmer 1986). In the Uinta Basin, evidence of Early Archaic presence is relatively sparse compared to the subsequent Middle and Late Archaic periods. Early Archaic (ca. 6000-3000 B.C.) sites in the Basin include sand dune sites and rockshelters primarily clustered in the lower White River drainage (Spangler 2002:373). Early Archaic projectile points recovered from Uinta Basin contexts include Pinto Series, Humboldt, Elko Series, Northern Side-notched, Hawken Side-notched, Sudden Side-notched and Rocker Base Side-notched points. Excavated sites in the area with Early Archaic components include Deluge Shelter in Dinosaur National Monument, and open campsites along the Green River and on the Diamond Mountain Plateau (Spangler 2002:374).

The Middle Archaic (ca. 3000-500 B.C.) is characterized by improved climatic conditions and an increase in human population on the northern Colorado Plateau. Several stratified Middle Archaic sites have been excavated and dozens of sites have been documented in the Uinta Basin. Middle Archaic sites in the area reflect cultural influences from the Plains, although a Great Basin and/or northern Colorado Plateau influence is represented in the continuation of the Elko Series

projectile points. Subsistence data from Middle Archaic components indicate gathering and processing of plants as well as faunal exploitation (e.g., muledeer, antelope, bighorn sheep, cottontail rabbit, muskrat, prairie dog, beaver and birds).

The Late Archaic period (ca. 500 B.C.-A.D. 550) in the Uinta Basin is distinguished by the continuation of Elko Series projectile points with the addition of semi-subterranean residential structures at basecamps. By about A.D. 100, maize horticulture and Rose Springs arrow points had been added to the Archaic lifeway. The transitional period from the Archaic to Formative lifeways in the Uinta Basin ca. AD 200-400 is well-dated at Steinaker Gap (north of Vernal) by ephemeral structures, bell-shaped storage pits, irrigation ditches, and burials (Talbot and Richens 2004). It is postulated that a very rapid acceptance and implementation of a farming strategy took place in northeastern Utah; introduced by small-scale migrations of Basketmaker farmers interacting with the indigenous hunter-gatherers (Talbot and Richens 2004:77). By AD 250, the occupants of Steinaker were already growing both corn and squash.

### *Formative Stage*

The Formative stage (A.D. 500-1300) is recognized in the area as the Uinta Fremont as first defined by Marwitt (1970). This stage is characterized by a reliance upon domesticated corn and squash, increasing sedentism, and in its later periods, substantial habitation structures, pottery, and bow and arrow weapon technology. Traits considered unique or predominate to the Uinta Basin include calcite-tempered pottery, two-handled wide-mouth vessels, Utah type metates, the use of gilsonite for pottery repair, settlement on tops of buttes, and large-shouldered bifaces (Shields 1970). Based on the evidence from Caldwell Village (AD 550-650), the Goodrich Site (AD 700-900), Whiterocks Village (AD 900), the Gilbert Site (AD 650-850), and others, the temporal range of the Uinta Fremont appears to be from AD 550 to 950 (Spangler 2000). Possible irrigation ditches were present at Caldwell, and stable carbon isotope analysis on four human burials from the site indicate that C<sub>4</sub> resources (including corn) comprised about 75 percent of the diet of these individuals (Coltrain 1993). The Uinta Fremont villages are characterized by shallow, saucer-shaped pithouse structures with randomly placed postholes and off-center firepits, some of which were adobe-rimmed. Small temporary use sites, including campsites, lithic scatters, hunting blinds, etc., are common throughout the region but in particular in the foothills and upland areas.

### *Protohistoric Stage*

Archaeological evidence suggests that Numic peoples appeared in east-central Utah at approximately A.D. 1100 or shortly before the disappearance of Formative-stage peoples (Reed 1994). The archaeological remains of Numic-speaking Utes consist primarily of lithic scatters with low quantities of brown ware ceramics, rock art, and occasional wickiups. The brownware ceramics appear to be the most reliable indicator of cultural affiliation, as Desert Side-notched and Cottonwood Triangular points were manufactured by other cultural groups beside the Ute (Horn, Reed, and Chandler 1994:130). Other possible diagnostic Numic artifacts include "Shoshonean knives" which are leaf-shaped chipped stone bifaces with relatively wide bases and tapering blades. They are bilaterally resharpened on both sides of the distal end of the blade. Although these tools may be affiliated with the Shoshone group of Eastern Nevada and Wyoming, similar bifaces are common throughout much of central Utah. The function of these tools is unknown, although some exhibit glossy wear over the blade suggesting the cutting of soft tissues such as meat, while others exhibit wear and distal breaks that suggest use as drills (Janetski 1994). Another argument for the distinct shape of these knives is that it is a function of continual resharpening while hafted.

The early Utes in Uintah County were Uinta-ats, a small band of a few hundred members (Burton 1996:20). In pre-horse days, Ute family groups lived largely independent of others; with key gathering, hunting, and fishing sites being communal and granted to all within both the local and extralocal Ute communities (Burton 1996:340). According to Smith's (1974) informants both deer and buffalo were important game for the White River Ute band. Before the buffalo became extinct in the Uinta Basin in the 1830s, the Ute would make trips northeast of Fort Bridger in the vicinity of what is now Rock Springs and Green River, Wyoming using the horse to surround and drive the buffalo over a precipice (Smith 1974; Callaway, Janetski, and Stewart 1986). Small mammals, rodents, fish, birds, and insects were also procured, although this subsistence strategy was more evident among the Uintah Utes than among the Yampa or Uncompahgre Utes (Spangler 1995:742). All Ute groups made tripod or conical houses with a three or four-pole foundation and a circular ground plan (some 10-15 feet in diameter), a covering of brush or bark, and cooking or heating fires in shallow pits both inside and outside of the huts (Smith 1974). The utilization of these structures apparently continued even after the introduction of the tipi (Spangler 1995:745). Three types of storage facilities were used by Ute groups in the area. One involved the construction of pits in cliff overhangs or shelters with rawhide or woven sagebrush bark bags containing food items stashed within them (Spangler 1995:746). The storage pit was then covered with soil and a fire was constructed over the top to destroy evidence the pit had been excavated (Smith 1974:67). A second strategy involved the construction of platforms made of sticks of coniferous trees with foliage thick enough to protect the cache from inclement weather (Spangler 1995:746). When the sacks had been placed on the platform they were usually covered with cedar bark, so that the rain would drain off (Smith 1974:67). A third strategy involved storage platforms about 5 ft high placed outside the brush shelters and tipis (Spangler 1995:746). These platforms, erected on poles, were either slightly sloping or flat and hollowed out with the platforms made of bound together sagebrush (Smith 1974:68).

The seeds of nut pines, including the double-needled pinyons (*Pinus edulis*) were highly prized by the Utes in the area, especially in years of abundance (occurring in 3-7 year cycles). Harvest began in the late summer with the gathering of green cones, using long hooked and straight harvesting poles. According to Smith (1974:66), the long poles were used to beat the tree limbs and dislodge the cones, which fell to the ground and were gathered. The nuts were either shaken or beaten from the cones. Cones were usually transported to a central processing station in large conical baskets (Fowler 1986:65). The green cones were then pit roasted, causing their bracts to open and their seeds to be partially released (Fowler 1986:65). Pinyon nuts were also contained in a flat basket with hot coals and shaken until the shells popped off. After the nuts were winnowed, they were often ground on a metate with the meal being stored for the winter (Smith 1974:66).

### Early Ute History

On May 5, 1864, Congress passed a law confirming the 1861 executive order setting up the Uintah Reservation (Burton 1996:24). This treaty provided that the Ute people give up their land in central Utah and move within one year to the Uintah Reservation without compensation for loss of land and independence. The Uinta-ats (later called Tavaputs), PahVant, Tumpawanach, and some Cumumba and Sheberetch of Utah were gathered together at the Uintah agency during the late 1860s and early 1870s to form the Uintah Band (Ibid 18-19). In the 1880 treaty council the White River Utes, who had participated in the Meeker Massacre, were forced to sell all their lands in Colorado, and were moved under armed escort to live on the Uintah Reservation (Callaway,

Janetski, and Stewart 1986:339). Shortly thereafter, 361 Uncompahgre Utes were forced to sell their lands, and were relocated to the Ouray Reservation adjacent to the southern boundary of the Uintah Reservation. This area embraced a tract of land to the east and south of the Uintah Reservation below Ouray lying east and south of the Uintah Reservation and east of the Green River. A separate Indian Agency, established in 1881 with headquarters at Ouray, was erected across the river from where the first military post, Fort Thornburgh was located. The infantry who participated in the relocation of the Colorado Indians ensured that the Uncompahgre and White River Utes remained on the two reservations (Burton 1996:28). The Dawes Severalty Act of 1887, opened the reservation to mineral exploration. When gilsonite was discovered in the Uinta Basin in the late 1800s, Congress was persuaded to apportion 7,040 acres from the reservation so the mineral could be mined.

## SURVEY METHODOLOGY

An intensive pedestrian survey, which is considered 100 percent coverage, was performed for this project. The project area was inspected for cultural resources by the archaeologists walking parallel transects spaced no more than 15 m (33 ft) apart. Ground visibility varied from fair to good. A total of 630 acres was surveyed on Ute Tribal land (Uintah and Ouray Agency).

Cultural resources were recorded as archaeological sites, which are spatially definable areas with features and/or ten or more artifacts. Sites were documented by archaeologists walking transects across the site, spaced no more than three meters apart. At the completion of the surface inspection, a Trimble GeoXH GPS receiver was employed to map the sites, including diagnostic artifacts and other relevant features and tools in reference to the site datum. Archaeological sites were photographed, with site data entered on an Intermountain Antiquities Computers System-inventory form (IMACS 1990 version; Appendix A). An aluminum-capped rebar stake stamped with the permanent or temporary site number was placed at each of the sites. Isolated finds are defined as individual artifacts or light scatter of items, which lack sufficient materials to warrant IMACS forms, or to derive interpretation of human behavior in a cultural and temporal context. All isolated artifacts are described in this report.

## INVENTORY RESULTS

The cultural resource inventory resulted in the documentation of seven archaeological sites (42Dc3686, 42Dc3687, 42Dc3688, 42Dc3689, 42Dc3690, 42Dc3691, and 42Dc3701).

Smithsonian Site No.: 42Dc3686  
Site Type: Surface Quarry  
Cultural Affiliation: Unknown Aboriginal  
NRHP Eligibility: Eligible, Criterion D

Description: This is a surface quarry of unknown aboriginal affiliation situated on a narrow bench below a ridge along the west side of Left Fork Antelope Canyon. The site lies within a pinyon-juniper woodland with an understory of low sagebrush, prickly pear cactus and yucca. Sediments are compacted tan silty sand overlaid with cobbles and boulders. The source material occurs as fist size or larger nodules of tan and orange mottled siltstone. A total of 230 pieces of debitage was analyzed representing all reduction stages although primary and secondary flakes are dominate. Tools include a biface, a chopper, one utilized flake, a retouched flake and seven mainly prepared cores. The site contains numerous other cores besides those analyzed. The vast majority of the artifacts are manufactured from the local siltstone.



Smithsonian Site No.: 42Dc3687  
Site Type: Lithic Scatter  
Cultural Affiliation: Unknown Aboriginal  
NRHP Eligibility: Eligible, Criterion D

Description: This is a lithic scatter of unknown aboriginal affiliation situated on a narrow bench below a ridge along the west side of Left Fork Antelope Canyon. The site lies within a pinyon-juniper woodland with an understory of low sagebrush, prickly pear cactus and Utah serviceberry. Sediments are compacted tan silty sand overlaid with cobbles and pebbles. This is a locality where the local tan and orange mottled siltstone was acquired off-site and further reduced into expedient tools prehistoric peoples. A total of 92 pieces of debitage was analyzed representing all reduction stages although primary and secondary flakes are dominate. Tools include three early stage bifaces, a scraper, four utilized flakes, one core and a tested cobble.

Smithsonian Site No.: 42Dc3688  
Site Type: Corral  
Cultural Affiliation: Ute or Euro-American  
NRHP Eligibility: Not Eligible

Description: This is a brush corral of either Ute Indian or European American cultural affiliation situated on a bench below a ridge on the west side of Left Fork Antelope Canyon. Sediments consist of compacted tan silt sand with a dense overlay of gravel and cobbles. Vegetation includes pinyon, juniper, low sagebrush, and Utah serviceberry. Feature A is a brush corral consisting of a main enclosure and a holding pen. The main corral measures 65 ft by 65 ft and consists of piled pinyon and juniper axe cut and torn-off branches stacked a maximum of 7 ft high. The informal walls are supported by live trees which are incorporated into the corral. The north side of the enclosure is fairly open and a holding pen occurs a short distance to the northwest. The small enclosure measures 25 ft (E-W) by 15 ft (N-S) and is constructed in the same style as the larger enclosure. The structure is fairly intact impacted mainly by water rills. No artifacts were observed associated with the corral. The site was either used for the temporary containment of wild horses or livestock.

Smithsonian Site No.: 42Dc3689  
Site Type: Prehistoric Temporary Camp  
Cultural Affiliation: Unknown Aboriginal  
NRHP Eligibility: Eligible, Criterion D

Description: This is a small temporary camp of unknown aboriginal affiliation located along the top and sides of a narrow ridge overlooking Right Fork Antelope Canyon. The site lies within a pinyon-juniper woodland with an understory of low sagebrush and Mormon tea. Sediments are loose compacted tan silty sand overlaid with pebbles. Cultural remains consists of two chipped stone tools, lithic debitage, and a rock alignment. A total of 100 pieces of debitage were analyzed across the site representing all reduction stages, although secondary and tertiary flakes appear more prevalent. Tools consists of a Stage III biface and one utilized flake. Material types include tan chert and dark gray chert. Feature A is an informal rock alignment consisting of 14 unmodified large to medium sandstone slabs within a 91 cm by 91 cm area. The majority of the stones are laying flat on the surface with several partially buried. No cultural fill was observed. The slabs are out-of-context, although the function of the alignment is undetermined.

Smithsonian Site No.: 42Dc3690  
Site Type: Historic Inscriptions  
Cultural Affiliation: European American  
NRHP Eligibility: Not Eligible

Description: The site consists of a number of Euro-American inscriptions scratched on a prominent sandstone outcrop along a ridge between the Left Fork or Right Fork Antelope Canyon. Surrounding vegetation includes a pinyon-juniper woodland. The names and dates are scratched into a dark patinated face of the outcrop and a few are accompanied by symbols. The heights of the inscriptions range from 48 to 89 inches ags. They consist of the following names and dates: WHL 1912; Lloyd Coe, Tabiona 1919; Brent Bailey 1966-1991; Wendel Keel Dec 4 1931; Orien Brady Dec. 12 1929; FC Reynold Smart Lindsay; and 5 1926. No cultural materials were observed in the area.

Smithsonian Site No.: 42Dc3691  
Site Type: Prehistoric Rock Art  
Cultural Affiliation: Unknown Aboriginal  
NRHP Eligibility: Eligible, Criterion C & D

Description: The site consists of a single rock art panel with a number of zoomorphic, anthropomorphic and abstract petroglyphs located on a prominent outcrop overlooking Left Fork Antelope Canyon to the east. Situated on a southeast facing cliff face, the upper portion of the outcrop extends slightly over the panel. The cliff face is darkly patinated and relatively rough. Some of the images have been subjected to exfoliation and other weathering agents. Approximately 14 figures are stippled pecked, solid pecked, and a combination of both techniques have been rendered within a 193 (length) by 85 cm (height) area. The upper figures includes an outline of a rectangular bodied bighorn sheep (Exp. 9) with short stick-like legs, and curved-back horns. On the same level is a second lightly stippled bighorn sheep with an elongated round body. Separated by a crack in the cliff face is a small anthropomorph with outstretched arms, slightly splayed legs and a round head. The middle figures on the panel consist of a row two medium-sized squared bodied bighorn sheep followed by about five smaller bighorn sheep, all which are solidly pecked. At least three larger horned quadrupeds occur at the bottom of the panel, but due to exfoliation their physical characteristics are unclear. One abstract element (see Exp 10) is also present on the panel and consist of a row of six or more stipple pecked lines. Artifacts are limited to two decortication flakes and two secondary flakes manufactured from tan siltstone. The elements and composition of 42Dc3691 are reminiscent to Uncompahgre Style which has a broad temporal span (cal 1000 B.C. to A.D. 1000) (Cole 1990:86).

Smithsonian Site No.: 42Dc3701  
Site Type: Surface Quarry  
Cultural Affiliation: Unknown Aboriginal  
NRHP Eligibility: Not Eligible

Description: This is a limited activity surface quarry of unknown aboriginal affiliation situated on a narrow bench below a ridge along the west side of Left Fork Antelope Canyon. The site lies on compact residual sediments within a pinyon-juniper woodland. The source material consists of a sparse amount of light brown siltstone fist size or larger nodules. Cultural materials are limited to three cores, three utilized flakes, and 16 pieces of debitage. Debitage is represented mainly by primary and secondary flakes.

Table 1. Summary of Archaeological Sites with Recommendations.

Site Number	Site Type	NRHP Status	Recommendation
42Dc3686	Prehistoric Surface Quarry	Eligible, Criterion D	Avoid
42Dc3687	Prehistoric Lithic Scatter	Eligible, Criterion D	Avoid
42Dc3688	Historic Corral	Not Eligible	None
42Dc3689	Prehistoric Temporary Camp	Eligible, Criterion D	Avoid
42Dc3690	Historic Inscription	Not Eligible	None
42Dc3691	Prehistoric Rock Art	Eligible, Criteria C & D	Avoid
42Dc3701	Prehistoric Surface Quarry	Not Eligible	Avoid

## NATIONAL REGISTER OF HISTORIC PLACES EVALUATION

The National Register Criteria for Evaluation of Significance and procedures for nominating cultural resources to the National Register of Historic Places (NRHP) are outlined in 36 CFR 60.4 as follows:

The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of State and local importance that possess integrity of location, design, setting, material, workmanship, feeling, and association, and that they:

- a)...are associated with events that have made a significant contribution to the broad patterns of our history; or
- b)...are associated with the lives of persons significant to our past; or
- c)...embody the distinctive characteristics of a type, period, or method of construction; or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- d)...have yielded or may be likely to yield information important in prehistory or history.

The inventory resulted in the documentation of seven archaeological sites (42Dc3686, 42Dc3687, 42Dc3688, 42Dc3689, 42Dc3690, 42Dc3691, and 42Dc3701). Four prehistoric sites are recommended eligible to the NRHP. Site 42Dc3686 is a surface quarry that retains good integrity and spatial patterning. It exhibits several different lithic tool types as well as a high density of debitage. This site is recommended eligible to the NRHP under Criterion D because it is likely to contribute to the understanding of aboriginal lithic production and resource utilization in the context of procurement, lithic technology, and land use patterns. Site 42Dc3687 is a discrete lithic scatter that retains good integrity and spatial patterning. It exhibits a diversity of lithic tools and moderate amount of debitage. The site is recommended eligible to the NRHP under Criterion D

*State count*  
*who's designation (USHPO) Smithsonian Institution*  
*Map provided by Tribe*

because it is likely to address such research domains as site function, lithic technology, and aboriginal lithic production systems. Site 42Dc3689 is a temporary camp that retains good integrity and spatial organization. It contains a moderate amount of artifacts with several tools and lies in loose sediments yielding potential for buried cultural remains. Therefore, this site is recommended eligible under Criterion D since it is likely to address such research domains as site function, lithic technology, cultural affiliation, and land use patterns. Site 42Dc3691 is a rock art panel displaying numerous petroglyph figures. This site is recommended eligible to the NRHP under Criterion C and D. The rock art panel embodies the distinctive characteristics of a type, period, and method of construction and may represent the work of a master, and possesses high artistic values (Criterion C). In addition, this site could be subject to further research including rock art style, thematic interpretations, chronology, and spatial analysis (Criterion D). One small surface quarry (42Dc3701) is recommended ineligible to the NRHP since it contains a minimal quantity and diversity of cultural materials. The site lacks temporal indicators, features, and potential for additional cultural remains, hence, it is unlikely to contribute to the prehistoric research domains of the area.

Both of the historic sites consisting of a corral (42Dc3688) and an inscription panel (42Dc3690) are considered not eligible to the NRHP. These sites are not associated with events that have made a significant contribution to the broad patterns of our history or with the lives of persons significant to our past (Criteria A and B). Additionally, the sites do not embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic value, or represent a significant and distinguishable entity whose components may lack individual distinction (Criterion C). Furthermore, the sites are unlikely to contribute additional information important to the history of the area (Criterion D).

#### CONCLUSION AND RECOMMENDATIONS

The cultural resource inventory of Petroglyph Operating Company's block parcel in Township 5 South, Range 4 West, Section 36 resulted in the documentation of seven archaeological sites (42Dc3686, 42Dc3687, 42Dc3688, 42Dc3689, 42Dc3690, 42Dc3691, and 42Dc3701). Four prehistoric sites (42Dc3686, 42Dc3687, 42Dc3689, and 42Dc3691) are recommended eligible to the NRHP. In accordance with Ute Tribal protocol all these sites including an ineligible surface quarry (42Dc3701) require avoidance from future ground disturbing undertakings. Based on adherence to the avoidance recommendation, a determination of "no historic properties affected" is proposed for the project pursuant to 36 CFR 800.

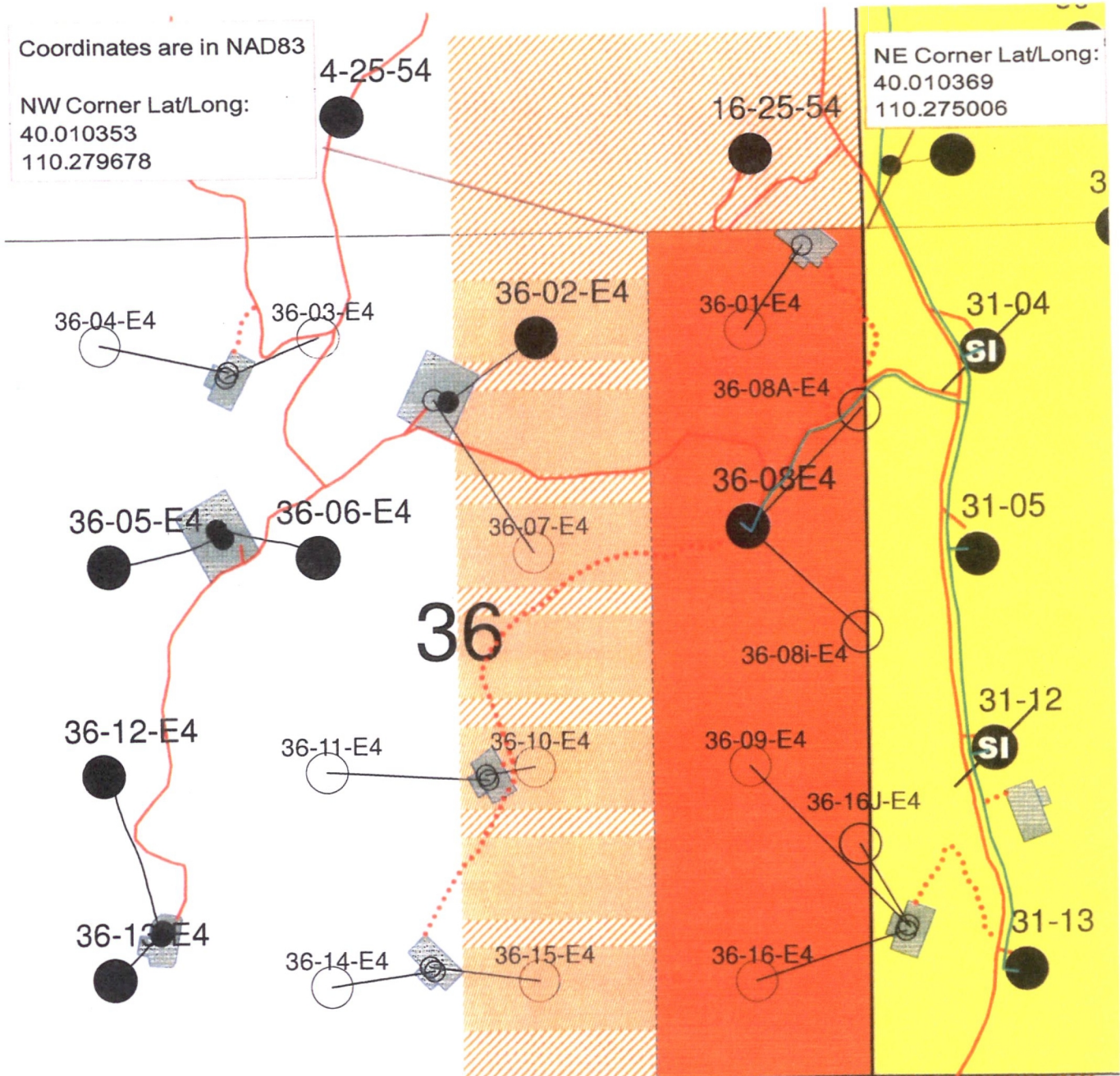


Map 1

Coordinates are in NAD83

NW Corner Lat/Long:  
40.010353  
110.279678

NE Corner Lat/Long:  
40.010369  
110.275006



Well Status

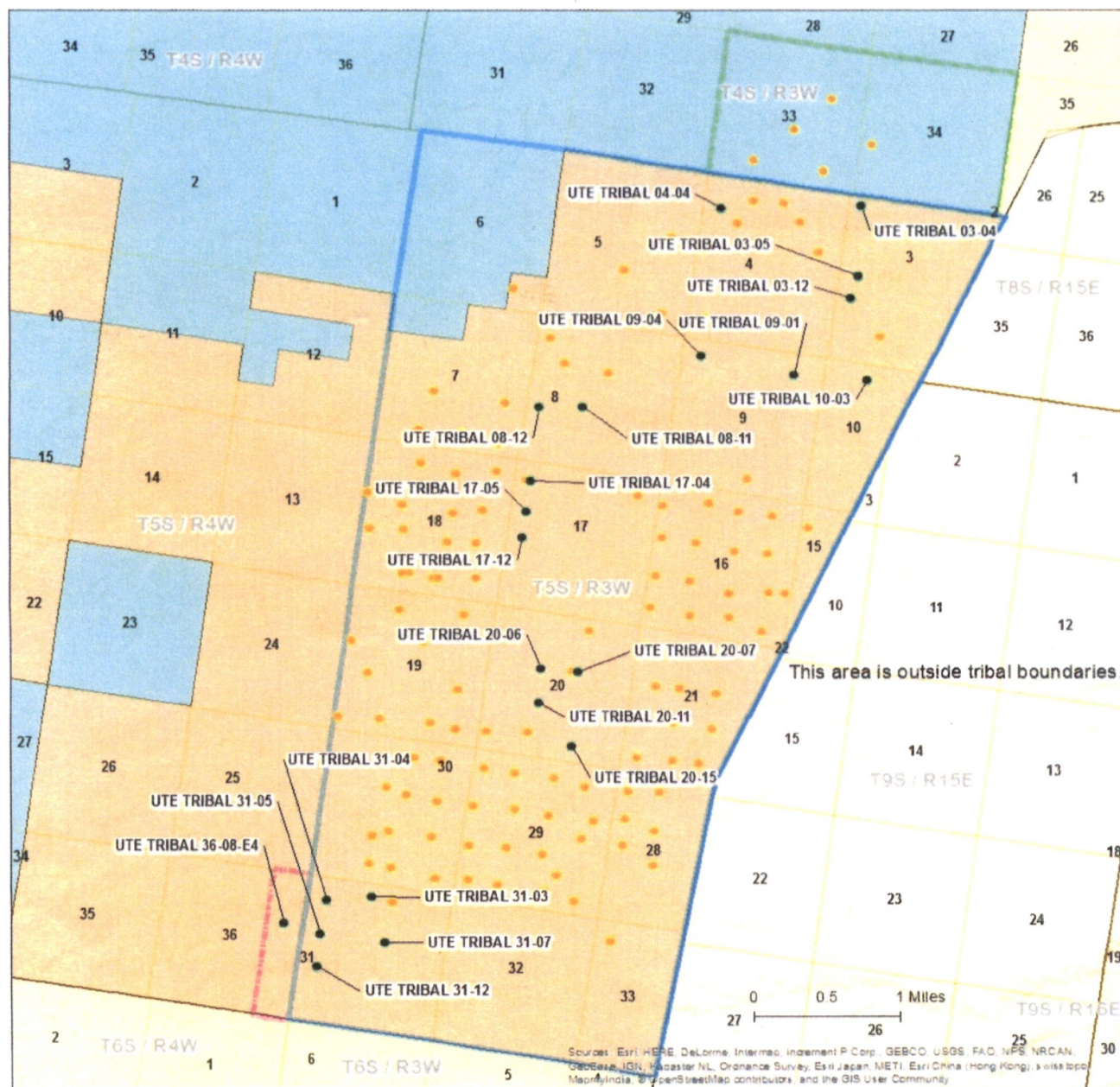
- OIL
- SI
- Future Well Location
- 1/4 Mile AOR Buffer
- Major Modification Area
- Current Area Permit
- Existing Road
- Proposed Road
- Proposed Injection Pipeline

SW Corner Lat/Long:  
39.995908  
110.279694

SE Corner Lat/Long:  
39.995911  
110.275019

	ANTELOPE CREEK
	DUCHESE COUNTY UTAH
T5S-R4W Section 36 Major Modification Request	
Prepared by: [Name] Date: 8-27-13 Scale: 1" = 1/4 Mile	Checked by: [Name] Date: 9-10-13 Scale: 1" = 1/4 Mile





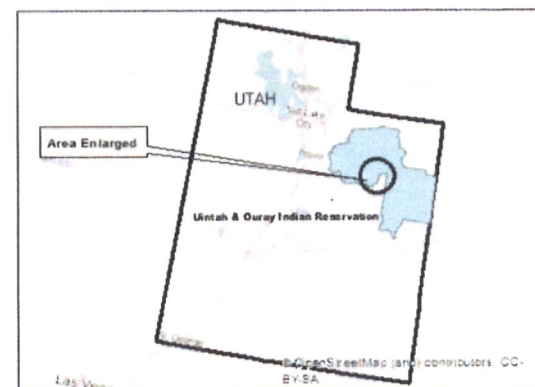
# Uintah and Ouray Indian Reservation Land Status Verification - Surface Ownership Petroglyph Energy Area Permit

## Legend

- Petroglyph Energy Proposed EOR SWD wells (2016)
- Petroglyph Energy Existing Wells
- Petroglyph Energy Original Boundary
- Petroglyph Energy 1998 Area Modification
- Petroglyph Energy 2016 Proposed Area Modification
- Township and Range
- Section

## Surface Ownership

- Forest Service
- Homestead Patent Land
- Tribal Trust Land
- Other Fee Land



Date: January 22, 2016

Map Projection: NAD83, 2011, Contiguous USA Albers, Meters

Data Sources:

Base Maps: <http://www.OpenStreetMap.org> and Esri, HERE, DeLorme, Intermap, et al.

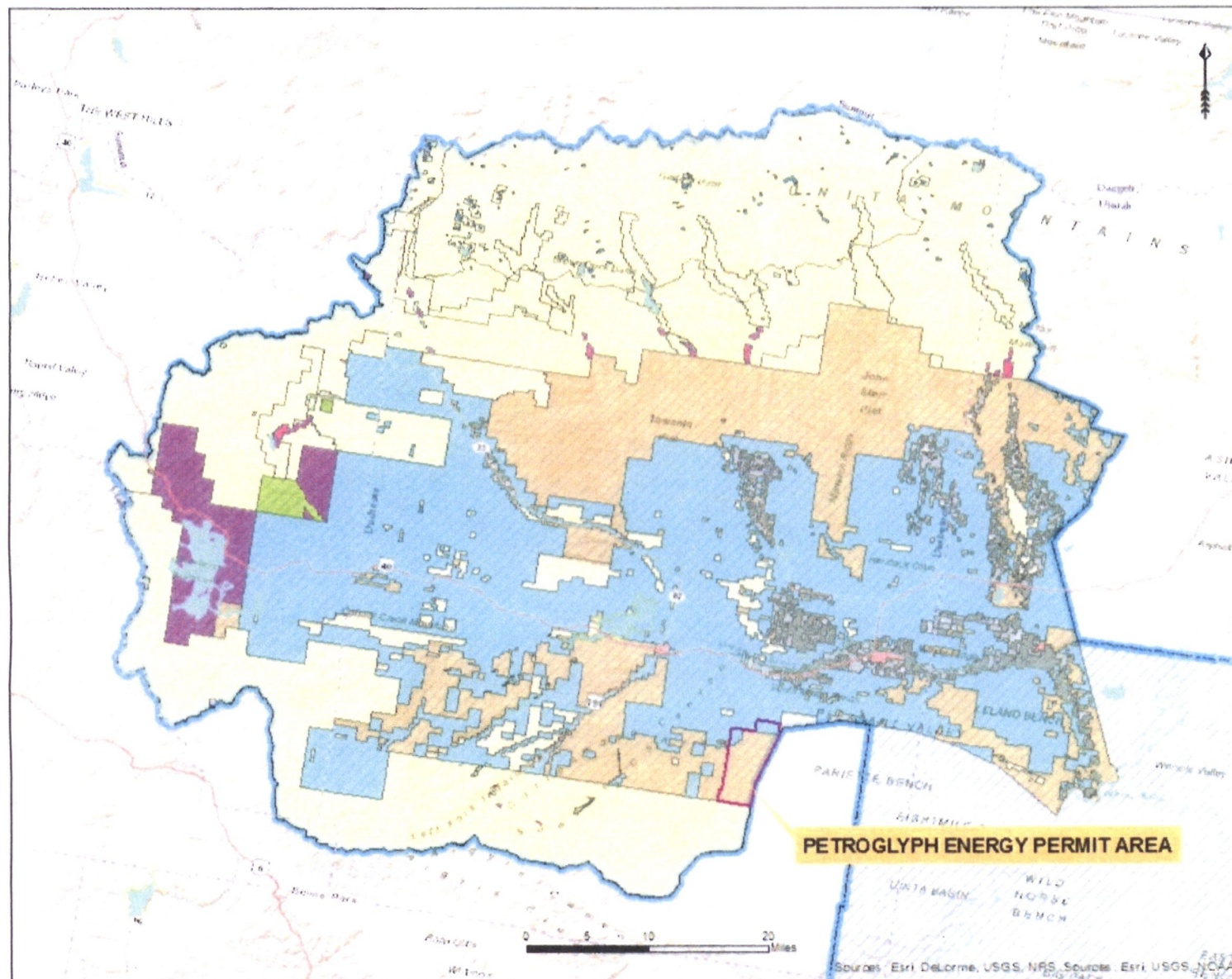
Land Ownership: <http://gis.utah.gov/data/spd-004-sha/land-ownership/>, State Plane Coordinates, Area Permit Boundary, and Wells: U.S. EPA Region 8 (2016)

Disclaimer: EPA makes no claim regarding the accuracy or precision of these data. Questions concerning the data should be referred to the source agency. This map does not necessarily represent EPA's position on any Indian Country boundaries or the jurisdictional status of any specific location.

Warning: Ownership Tracts shown in this GIS product are derived from records that may contain some errors resulting in certain lands not being mapped, or some human errors. These may be corrected at a future date.

Map 2





# Utah & Ouray Indian Reservation Land Status Verification Petroglyph Energy Proposed Boundary Expansion Proposed EOR/SWD Wells

## Legend

- Utah & Ouray Indian Reservation
- Petroglyph Resources Proposed Boundary 2016

## Surface Ownership

- Current Allotments Owned by Individual Indians
- Former Allotments in Fee Ownership to Non-Indians
- Indian Allotments Owned by Tribe
- Forest Service
- Homestead Patent Land
- Original Indian Townsites
- Tribal Trust Land
- Other Fee Land
- Private Native American
- Private Forest Service
- Private
- State
- State Bureau of Reclamation
- State Native American
- State Wildlife Resources



Date: January 26, 2016

Map Projection: NAD83 (2011), Contiguous Albers USA, Meter

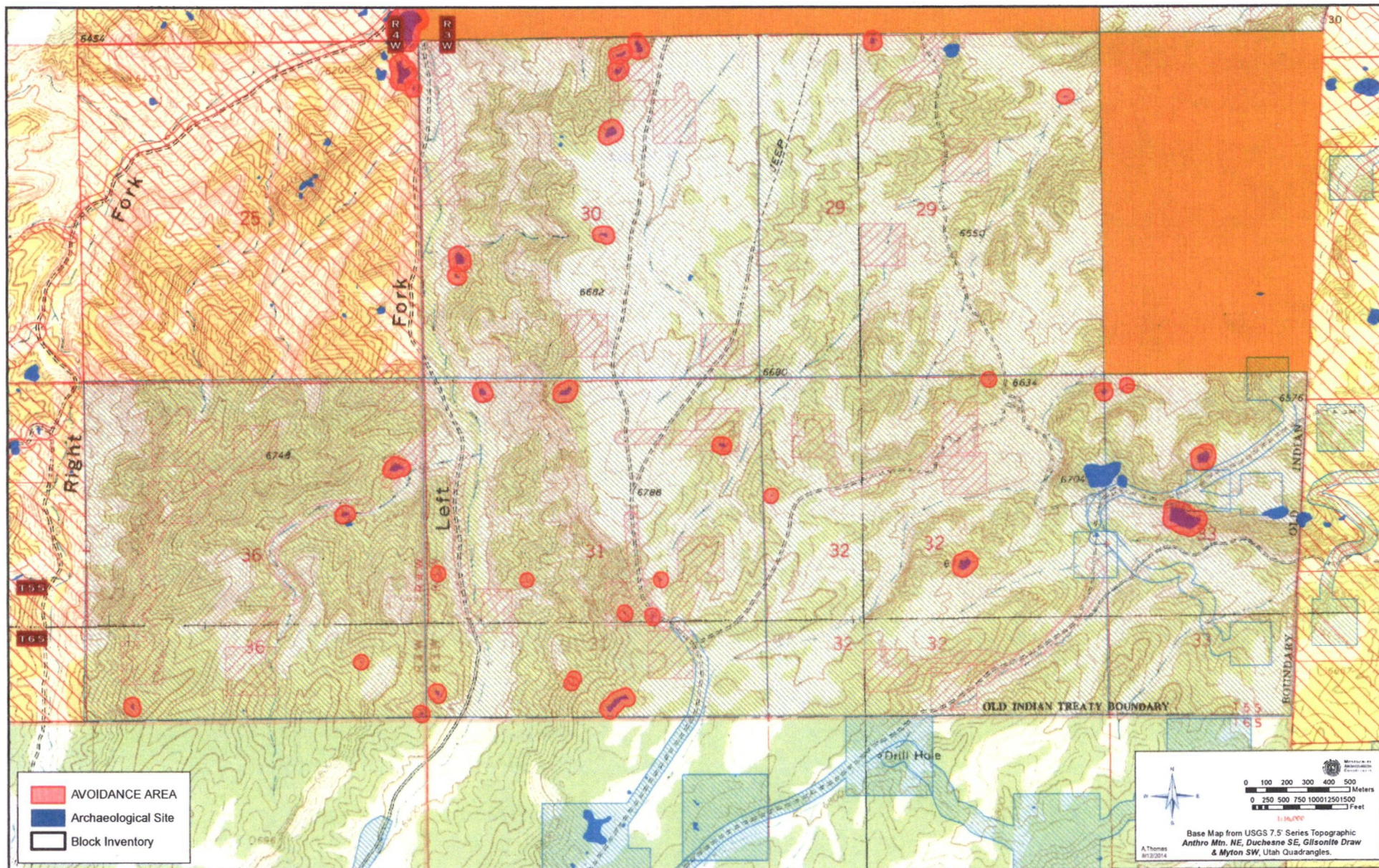
Data Sources:

Wells - U.S. EPA Region 8 (2016),  
Tribal Lands - BIA (2008), U.S. Census Bureau (2010),  
& U.S. EPA Region 8 (2016),  
Base - Esri web service (2016).

Disclaimer: BPA makes no claim regarding the accuracy or precision of these data. Questions concerning the data should be referred to the source agency. This map does not necessarily represent BPA's position on any Indian Country boundaries or the jurisdictional status of any specific location.

Map 3





Map 4



# UIC Program Action: NHPA Consultation – Utah SHPO

Operator: Petroglyph

Permit: UT20736-00000, area permit expansion

		Mail code	Initials	Date
Permit Writer: Bruce Suchomel	Phone: 6001	8WP-SUI	BRS	12/13/16
Mike Boydston	Legal Counsel (NHPA)		WBS WBS	12/14/16
C. Cline, Admin	Admin review	8WP-SUI	CC	12/22/16
D. Minter, UIC Unit Chief	Concur	8WP-SUI	DM	12/23/16
S. Bahrman Acting WP Dir	Concur	8WP-SUI	SBF	12/23/16
Betina Hemingway	Concur	8WP-S	BH	12/27/2016
D. O'Connor, ARA	Signature ✓	8WP	DO	12/27/16
C. Cline, Admin	Date stamp then scan signed package and mail/email to cc list, please include Permit Coordinator	8WP-SUI	CC	2/9/2017
Bruce Suchomel, Permit Writer		8WP-SUI		

## LEFT SIDE

Concurrence Copy

## RIGHT SIDE

Transmittal Letter

**Comments:**

CONCURRENCES	Author + ext.	Print 1 <sup>st</sup> initial + last name							
		Office code							
		Date							

recommendations for a finding of “no historical properties affected.” There are, however, seven reported archaeological sites within the boundaries of the proposed area Permit expansion, of which four are identified as eligible for the National Register of Historic Places. Based on information provided by the Tribe, the general locations of these seven sites are described in the CRI.

### **EPA’s Initial NHPA Determination**

We conclude that no historic properties will be affected. To discourage looting, the Tribe does not disclose to operators the exact location of cultural resources. They have, however, provided Map 4, which shows the four avoidance areas that contain the seven identified sites with the following Smithsonian designations: 42Dc3686, 42Dc3687, 42Dc3688, 42Dc3689, 42Dc3690, 42Dc3691, and 42Dc3701. These four avoidance areas are excluded from the area Permit expansion. This statement is also included within the UIC Permit modification.

### **Request for SHPO Concurrence**

The EPA requests your concurrence regarding its initial determination in this matter. If possible, please send us your response within 30 days of receipt of this letter.

If you have any questions or comments, please contact Bruce Suchomel of my staff at 303-312-6001 or [suchomel.bruce@epa.gov](mailto:suchomel.bruce@epa.gov).

Sincerely;

Darcy O’Connor  
Assistant Regional Administrator  
Office of Water Protection

Enclosure: Class I Cultural Resources Inventory Report, September 8, 2014

cc:

Betsy Chapoose, Director of Cultural Resources, Ute Indian Tribe  
Esther McCullough, BLM  
Mike Hackney, Petroglyph



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 8

1595 Wynkoop Street  
Denver, CO 80202-1129  
Phone 800-227-8917  
www.epa.gov/region8

Ref: 8P-W-UIC

CONCURRENCE

Christopher Merritt, Deputy SHPO  
Utah State History  
300 S. Rio Grande Street  
Salt Lake City, Utah 84101

Re: NHPA Section 106 Consultation  
Petroglyph Permit UT20736-00000 Area Permit Expansion, Uintah and Ouray Reservation,  
E¼ Section 36, T5S-R4W, USM, Duchesne County, Utah

Dear Mr. Merritt:

The U.S. Environmental Protection Agency (EPA) Underground Injection Control Program (UIC) would like to inform you of, and request your recommendations and concurrence regarding, our proposed approach for ensuring compliance with Section 106 of the National Historic Preservation Act (NHPA) as it relates to a pending UIC permit decision. The proposed UIC area permit expansion would authorize the conversion of production wells to enhanced oil recovery wells within the area referenced above.

In accordance with 36 C.F.R. § 800.3(a), the EPA has made an initial determination that no historic properties will be affected by its planned UIC permit decision regarding the proposed injection wells.

**Background**

The proposed project involves a ¼-square-mile addition to the area covered by an existing UIC area permit known as Antelope Creek, UIC permit UT20736-00000. See enclosed maps. The additional land area, shown in Map 1, is also the area of potential effect. Map 2 shows the proposed additional area next to the existing area permit, and Map 3 shows the existing area permit boundaries within the Uintah and Ouray Indian Reservation. The project would require some new land disturbances related to the construction of well infrastructure that may accompany the conversion of up to seven production wells to injection wells. (Only one production well currently exists – six others are planned by Petroglyph with their approximate locations shown on Map 1.) These potential injection wells would be used to inject produced water from nearby oil and gas production wells to enhance the recovery of oil. Associated well infrastructure will include a proposed injectate pipeline and proposed road as shown in Map 1, and a small well house set over the wellhead. The EPA is preparing a UIC area permit modification for the proposed expansion.

A Cultural Resources Inventory (CRI) Report for the proposed project was prepared by Montgomery

CONCURRENCES	Author + ext.	Print 1 <sup>st</sup> initial + last name	B. Suchome	M. Snyder	C. Cline	Montgomery	B. O'Connor		
	Office code		8WP-SUI	822	8WP-SUI	8WP-S	8WP		
	Date		12/13/16	12/16/16	12/22/2016	12/23/16	12/27/16	12/27/16	



Archaeological Consultants, Inc. on September 8, 2014, and is enclosed. The report contains recommendations for a finding of "no historical properties affected." There are, however seven reported archaeological sites within the boundaries of the proposed area permit expansion, of which four are identified as eligible for the National Register of Historic Places. Based on information provided by the Tribe, the general locations of these seven sites are described in the CRI.

### **EPA's Initial NHPA Determination**

We conclude that no historic properties will be affected. To discourage looting, the Tribe does not disclose to operators the exact location of cultural resources. They have, however, provided Map 4<sup>↑</sup> which shows the four avoidance areas that contain the seven identified sites with the following Smithsonian designations: 42Dc3686, 42Dc3687, 42Dc3688, 42Dc3689, 42Dc3690, 42Dc3691, and 42Dc3701. These four avoidance areas are excluded from the area permit expansion. This statement is also included within the UIC permit modification.

### **Request for SHPO Concurrence**

The EPA requests your concurrence regarding its initial determination in this matter. If possible, please send us your response within 30<sup>2</sup> days of receipt of this letter.

If you have any questions or comments, please contact Bruce Suchomel of my staff at 303-312-6001 or [suchomel.bruce@epa.gov](mailto:suchomel.bruce@epa.gov).

Sincerely,

Darcy O'Connor  
Assistant Regional Administrator  
Office of Partnerships and Regulatory Assistance

Enclosure: Class I Cultural Resources Inventory Report, September 8, 2014

cc:

Betsy Chapoose, Director of Cultural Resources, Ute Indian Tribe  
Esther McCullough, BLM  
Mike Hackney, Petroglyph

8P-TA, Sam Vance  
8ENF-UFO, Gary Wang